PAPERS

IN

CHEMISTRY.

TWENTY-FIVE GUINEAS *were this Session voted to Mr.* CHARLES WILSON, *No.* 35, *Worcester-st. Borough, for his Invention of a Composition, forming a Substitute for Portland-Stone Chimney-pieces. The following Communications were received from him, and a Model of such a Chimney-piece is preserved in the Society's Repository.*

SIR,

I BEG leave to lay before the Society instituted for the Encouragement of Arts, &c. a substitute for Portland-stone Chimney-pieces, made by me, and no other person, at

at present, in this kingdom, and with such certificates of their utility, as, I trust, will prove satisfactory.

I am, most respectfully,

Sir,

Your very obedient servant,

CHARLES WILSON.

No. 35, *Worcester-Street,*
Queen-Street, Borough of Southwark,
Jan. 28, 1812.

To C. Taylor, M. D. Sec.

Mr. Wilson's *Process for Artificial Stone Chimney-Pieces.*

Take two bushels of sharp drift sand, and one bushel of sifted slacked quicklime, mix them up together with as little water as possible, and beat them well up together for half an hour, every morning for three or four successive days, but never wet them again after their first mixture.

To two gallons of water, contained in a proper vessel, add one pint of single size, made warm; a quarter of a pound of allum, in powder, is then to be dissolved in warm water, and mixed with the above liquor.

Take about a shovel full of the first composition, make a hole in the middle of it, and put therein three quarters of a pint of the mixture of allum and size, to which add three or four pounds of coarse plaster of paris; the whole is to be

be well beaten and mixed together rather stiff; put this mixture into the wooden moulds of your intended chimney-piece, the sides, ends and tops of which moulds are made of moveable pieces, previously oiled with the following mixture.

Take one pint of the droppings of sweet oil, which costs about one shilling the pint, and add thereto one pint of clear lime water, made from pouring boiling water on lumps of chalk lime in a close vessel till fully saturated, when the lime water becomes clear, it is proper to be added to the oil as above-mentioned, and on their being stirred together they will form a thick oily mixture, or emulsion, proper to apply upon the moulds.

In forming the side or jamb of a chimney-piece, the mould is to be first half filled with the sand-lime and plaster composition, then two wires wrapped round with a thin layer of hemp, and which wires are nearly the length of the piece to be moulded, are to be placed in parallel lines, lengthways, in the mixture or composition in the mould, and afterwards the mould is filled up with more of the composition, and if there is any superfluous quantity, it is to be struck-off with a piece of flat board.

The lid or top part of the mould is to be then placed upon it, and the whole subjected to a strong pressure from weighted levers or a screw press. The composition is to remain under this pressure for twenty or thirty minutes; the precise time necessary may be known, from examining a small specimen of the composition reserved purposely to determine the time it requires to harden and set firm.

The sides of the mould are to be held together by iron clamps and wedges.

The wires above-mentioned answer a double purpose, by

by giving strength to the jambs, and retaining the whole mass together in case it should at any time be cracked by accident.

The chimney-pieces may be made either plain or fluted, according to the mould, and when moulded, they are finished off by rubbing them over with allum water, and smoothing them with a trowel and a little wet plaster of paris.

A common plain chimney-piece of this composition, is sold at only seven shillings, and a reeded one at twenty-eight shillings, completely fitted up.

CERTIFICATES *were received from the following Persons.*

Mr. GEORGE SMART, of Ordnance Wharf, Westminster Bridge, who had tried these chimney-pieces for three years, and found them a valuable article.

Mr. J. WILLOUGHBY, who had fitted-up nine rooms with these chimney-pieces, in York-street, Broadway, Westminster.

Mr. WILLIAM SIMPSON, Hackney-road, who had furnished four rooms with them.

Mr. BUTLER, Weymouth-place, Hackney, who had fixed them in sixteen rooms.

Mr. CHERRY, who had fixed them in eight rooms, near Cuckfield, in Sussex.

The general tenor of the above certificates show, that they have found these chimney-pieces to answer the same purpose as those made of Portland-stone, and provided at half the expense.

The

The THANKS *of the Society were this Session voted to* H. B. WAY, *Esq. of Bridport Harbour, for the following Communication received from him, and for some excellent Bread which he furnished to the Society, made from a mixture of Wheat Flour and Potatoes, in conformity to his orders, by his Servant, Hannah Peters.*

SIR,

I HAVE sent to the Society of Arts, &c. a loaf of bread made from a mixture of wheat flour and potatoes. The principle I have adopted from a publication of Edlin's, and I have now got it in such perfection, that I and my family prefer it to bread made wholly of wheat flour. It has the valuable property of keeping many days longer in a moist state, which, in the country, where it is impossible to get fresh bread or yeast every day, and where persons can perhaps only conveniently bake once a fortnight, is a very great advantage. I had many prejudices to encounter in the first attempts I made, and I think great merit is due to my servant, Hannah Peters, for her perseverance and success, both in the making of it, and management of my oven in baking it, as both she and my neighbours were originally much prejudiced against my experiments in this line. I annex, for the Society's inspection, a statement of the cost and saving by the use of potatoes, and I hope, by degrees, this method will be extensively practised. I am sure, if the subject is noticed in the Society's volume, it will greatly contribute thereto. This

is the second year that I have constantly used this mixed bread, from the latter end of October to the latter end of May, and I assure you that it is a matter of great regret to my whole family, when, from the scarcity of potatoes, we commence the use of bread made wholly from wheat.

I am, very respectfully,

Dear Sir,

Your obedient humble servant,

H. B. WAY.

Bridport-Harbour, March 10, 1812.

To C. TAYLOR, M.D. SEC.

Process for making Bread from Potatoes and Wheat Flour, as practised under the direction of H. B. WAY, *Esq. March* 10, 1812.

SIXTEEN pounds of potatoes were washed, and when pared weighed twelve pounds. After boiling they weighed thirteen pounds, and were then mixed, whilst warm, with twenty-six pounds of flour, the potatoes were bruised as fine as possible, and half a pound of yeast added. Four quarts of warm water were added to the mixture of potatoes, yeast and flour, and the whole well kneaded together, and left two hours to rise, and then weighed forty-six pounds and four ounces. The whole made six loaves and two cakes, which were baked at two separate times, in my iron oven, each baking taking two hours. The six loaves

loaves and two cakes the day after being baked, weighed forty pounds and twelve ounces.

The oven is made of wrought iron on Count Rumford's plan, to heat from a separate fire-place. The time from the fire being lighted till the bread was baked at twice, was five hours, in which time six pounds of Walls-end coals and three pounds of cinders were consumed, besides a small quantity of wood used merely to light the fire.

Expenses of Bread made from a mixture of Potatoes and Wheat Flour, and comparisons in price with Wheaten Bread.

March 10, 1812.—16 lb. of potatoes paired and boiled, weighed 13 lb.; 4 lb. allowance for interest and loss on the stock bought in October, 1811, say 25 per cent. makes,

	s.	*d.*
20 lb. of potatoes, at 6 *s.* 6 *d.* per sack of 240 lb. the actual price when bought, October, 1811.	0	6½
26 lb. of fine flour, at 5 *l.* per sack of 280 lb.	9	3½
Half a pint of yeast - - -	0	2
6 lb. of coals, at 2 *l.* 18 *s.* 6 *d.* per chaldron, of 2808 lb. - - - -	0	1½
5 lb. of cinders, and wood for lighting fire, -	0	1½
	10	3
40 lb. 12 oz. of bread at the above date, at 1 *s.* 4 *d.* the quartern loaf, of 4 lb. 5 oz. 8 drams, would have been - - - -	12	6
Leaves a saving of - - -	2	3

	lb.	oz.	drams.
26 lb. of flour at the rate of 80 loaves, of 4 lb. 5 oz. 8 drams each, to the sack of 280 lb., would only have made	32	4	4
Gain in bread by 16 lb. of potatoes, is more than half a pound of bread for each pound of potatoes - -	8	7	12
	40	12	0.

The iron oven has been in use more than 15 years, it is 20 inches deep, 16 inches wide, and 16 inches high; and has been recently fresh set to heat from a separate fire-place, which is $10\frac{1}{2}$ inches deep, $7\frac{1}{2}$ inches wide, and 7 inches high, the bars of the fire-place 14 inches from the bottom of the oven.

Mr. Way's bread had been sent from Bridport Harbour to the Society on the 10th of March, 1812; and had been examined and tasted at sundry times by members of the Society, from the 12th to the 26th of March, so that the greatest part of the loaf had been eaten, what remained, on the 26th, had every appearance of bread made wholly from wheaten flour well fermented, and well tasted, without being in the least mouldy or stale, though it had been baked fourteen days. It appeared to the Committee to be a very successful mode of making bread, and that it might tend to lessen the consumption of flour, an object of considerable national importance.

The

The THANKS *of the Society were this Session voted to the* CORK INSTITUTION, *for fourteen specimens of Irish Marbles presented by them, along with the following Communication. The specimens are fixed in the Great Room of the Society.*

SIR,

HAVING an opportunity of sending to the Society of Arts, &c. a collection of marbles from the County of Cork, by Mr. Henry Shanahan, the son of a very respectable architect here, I gladly avail myself of it, and request the Society will accept of them as a small tribute of respect from the Cork Institution, and sent by desire of the Managers. I also send a copy of the charter of that body, which embraces the joint objects of the Dublin Society, and Farming Society of Ireland, with the exception of the fine Arts.

I am, Sir,

With much respect,

Your obedient humble servant,

THOMAS DIX HINCKS,

Secretary of the Cork Institution.

Cork, January 10, 1812.

To C. TAYLOR, M. D. SEC.

No. 1. Ballianahan Marble in the County of Cork, 20 miles from the City of Cork.

 2. Tralee

2. Tralee Marble, County of Kerry.
3. Ditto.
4. Black Rock Marble, 3 miles from the City of Cork.
5. Bishops Town ditto, 3 ditto ditto.
6. Ovens ditto, 5 ditto ditto.
7. Castlelyons ditto, 14 ditto ditto.
8. Tralee ditto, County of Kerry, ditto.
9. Mitcheltown ditto, County of Cork, 14 miles from the City of Cork.
10. Kilcree ditto, 6 ditto ditto.
11. Rochy Island ditto, 8 ditto ditto.
12. Rostellan ditto, 16 ditto ditto.
13. Kilkenny Marble.
14. Clonmel Marble, County of Tipperary, 40 miles from the City of Cork.

All the above descriptions of Marble are found in great abundance, and the quarries are convenient to land and water carriage.

H. SHANAHAN.

Cork.